CLAIMS

What is claimed is:

1. A method of applying electromagnetic energy to a target, comprising:

moving a coil relative to the target; and

applying current to the coil at a plurality of locations in order to direct magnetic fields to the target such that the magnetic field energy over time is higher at the target than areas around the target.

2. The method of claim 1, further comprising adjusting the position of the coil so that the magnetic field energy at the target is greater than magnetic field energy at areas near the target at the same distance to the coil.

3. The method of claim 1, further comprising adjusting the current to the coil at each location so that the magnetic field at the target is constant.

4. The method of claim 3, wherein the current is adjusted by the inverse of the square of the distance between the coil and the target.

5. The method of claim 1, further comprising selectively not applying current to the coil at a location where directing a magnetic field at the target would expose an area to undesirable magnetic field energy.

6. The method of claim 1, further comprising selecting a duration for applying the current depending on a location of the coil.

7. The method of claim 1, further comprising selecting an inter-pulse interval for applying the current depending on a location of the coil.

8. The method of claim 1, further comprising selecting an intra-pulse frequency for applying the current depending on a location of the coil.

9. The method of claim 1, further comprising selecting a speed of movement of the coil.

10. The method of claim 1, further comprising a plurality of coils.

11. The method of claim 1, wherein the coil is a transcranial magnetic stimulation (TMS) coil.

12. A method of applying electromagnetic energy to a target, comprising:

rotating a coil relative to the target;

adjusting the position of the coil so that magnetic field energy from the coil will be greater at the target than magnetic field energy at areas near the target at the same distance to the coil; and

applying current to the coil at a plurality of locations in order to direct magnetic fields to the target such that the magnetic field energy over time is higher at the target than areas around the target.

13. The method of claim 12, further comprising adjusting the current to the coil at each location so that the magnetic field at the target is constant.

14. The method of claim 13, wherein the current is adjusted by the inverse of the square of the distance between the coil and the target.

15. The method of claim 12, further comprising selectively not applying current to the coil at a location where directing a magnetic field at the target would expose an area to undesirable magnetic field energy.

16. The method of claim 12, further comprising selecting a duration for applying the current depending on a location of the coil.

17. The method of claim 12, further comprising selecting an inter-pulse interval for applying the current depending on a location of the coil.

18. The method of claim 12, further comprising selecting an intra-pulse frequency for applying the current depending on a location of the coil.

19. The method of claim 12, further comprising selecting a speed of movement of the coil.

20. The method of claim 12, further comprising a plurality of coils.

21. The method of claim 12, wherein the coil is a transcranial magnetic stimulation (TMS) coil.

22. A method of measuring electromagnetic energy, comprising:

receiving measurements of electromagnetic energy at a plurality of locations over time;

determining electromagnetic energy at a location over time; and

comparing the electromagnetic energy at the location over time to a threshold.

23. The method of claim 22, further comprising indicating that the threshold has been crossed.

24. The method of claim 22, further comprising receiving thresholds for each of the plurality of locations.

25. An apparatus for measuring electromagnetic energy, comprising:

a plurality of sensors for measuring electromagnetic energy; and

at least one sensor that is designed to represent a physical structure in a patient.

26. The apparatus of claim 25, wherein the physical structure is an axon bundle.

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